

WHAT IS CLAIMED AS NEW AND DESIRED TO BE SECURED BY LETTERS PATENT

OF THE UNITED STATES IS:

1. A toner composition comprising:

toner particles; and

5 an external additive located on the surface of the toner particles and comprising Si,

wherein the toner composition satisfies the following relationship:

$$(\text{PSi2p (1 min)} - \text{PSi2p (30 min)}) \leq 0.8 \text{ eV}$$

10 wherein PSi2p (1 min) represents a position of a Si2p peak of the Si element of the toner composition when the toner composition is subjected to an X-ray photoelectron spectroscopy analysis after the toner composition is mixed with a carrier for 1 minute using a TURBULA mixer at a revolution of 20 rpm, 15 and PSi2p (30 min) represents a position of a Si2p peak of the Si element of the toner composition when the toner composition is subjected to the X-ray photoelectron spectroscopy analysis after the toner composition is mixed with the carrier for 30 minute using the TURBULA mixer at a revolution of 20 rpm.

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2. The toner composition according to Claim 1, wherein the Si2p peak at the position PSi2p (30 min) has a half width not less than 1.20 times that of the Si2p peak at the position PSi2p (1 min).

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3. The toner composition according to Claim 1, wherein electrons are shared by the external additive and the toner

particles.

4. The toner composition according to Claim 1, wherein when the toner composition is used for a developing device which 5 includes a toner replenishing section configured to replenish the toner composition, a mixing section having a two-axis screw and configured to mix a carrier and the toner composition supplied from the toner replenishing section to prepare a developer, a developing sleeve configured to bear the developer 10 on the surface thereof to adhere the toner composition to an electrostatic latent image on an image bearer, and a regulating member configured to regulate flow of the developer to the developing sleeve, the replenished toner composition has substantially a same charge quantity as that of the toner 15 composition which previously exists in the mixing section when the replenished toner composition and the previously existing toner composition reach the regulating member.

5. The toner composition according to Claim 4, wherein 20 the replenished toner composition has a charge quantity not less than 0.7 times that of the previously existing toner composition when the replenished toner composition and the previously existing toner composition reach at least one of the doctor blade and the doctor roller.

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6. A two component developer comprising:
a carrier; and

a toner composition comprising:

toner particles; and

an external additive located on the surface of the toner particles and comprising Si,

5 wherein the toner composition satisfies the following relationship:

$$(PSi2p (1 \text{ min}) - PSi2p (30 \text{ min})) \leq 0.8 \text{ eV}$$

wherein PSi2p (1 min) represents a position of a Si2p peak of the Si element of the toner composition when the toner

10 composition is subjected to an X-ray photoelectron spectroscopy analysis after the toner composition is mixed with a carrier for 1 minute using a TURBULA mixer at a revolution of 20 rpm, and PSi2p (30 min) represents a position of a Si2p peak of the Si element of the toner composition when the toner composition 15 is subjected to the X-ray photoelectron spectroscopy analysis after the toner composition is mixed with the carrier for 30 minute using the TURBULA mixer at a revolution of 20 rpm.

7. The two component developer according to Claim 6,

20 wherein the carrier is a carrier coated with a material, and wherein any portions of the material located on the carrier have a thickness in a range of from 75 % to 125 % of an average thickness thereof.

25 8. A method for developing an electrostatic latent image, comprising:

replenishing a toner from a replenishing section;

mixing a carrier and the toner in a mixing section having a two-axis screw to prepare a developer,

feeding the developer toward a developing sleeve;

regulating flow of the developer to the developing sleeve

5 with a regulating member; and

developing the electrostatic latent image with the toner in the developer on the developing sleeve,

wherein the toner is the toner composition according to Claim 1.

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9. The method according to Claim 8, wherein the Si2p peak at the position PSi2p (30 min) has a half width not less than 1.20 times that of the Si2p peak at the position PSi2p (1 min).

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10. The method according to Claim 8, wherein electrons are shared by the external additive and the toner particles.

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11. The method according to Claim 8, wherein the replenished toner has substantially a same charge quantity as that of the toner which previously exists in the mixing section when the replenished toner and the toner previously existing in the mixing section reach the regulating member.

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12. The method according to Claim 11, wherein the replenished toner has a charge quantity not less than 0.7 times that of the toner previously existing in the mixing section when the replenished toner and the previously existing toner reach

the regulating member.

13. An apparatus for developing an electrostatic latent image, comprising:

5 a replenishing device configured to replenish a toner;
a mixing device configured to mix a carrier and the toner with a two-axis screw to prepare a developer,

a developing sleeve configured to bear the developer thereon to develop the electrostatic latent image with the toner
10 in the developer; and

a regulating member configured to regulate flow of the developer to the developing sleeve

wherein the toner is the toner composition according to
Claim 1.

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14. The apparatus according to Claim 13, wherein the Si2p peak at the position PSi2p (30 min) has a half width not less than 1.20 times that of the Si2p peak at the position PSi2p (1 min).

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15. The apparatus according to Claim 13, wherein electrons are shared by the external additive and the toner particles.

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16. The apparatus according to Claim 13, wherein the replenished toner has substantially a same charge quantity as that of the toner which previously exists in the mixing section

when the replenished toner and the toner previously existing in the mixing section reach the regulating member.

17. The apparatus according to Claim 16, wherein the
5 replenished toner has a charge quantity not less than 0.7 times that of the toner previously existing in the mixing section when the replenished toner and the previously existing toner reach the regulating member.